

Urban Sanitary Equipment Project (Phase 2)



Project Sites Oruro, Potosi, Taliya, Trinidad

1. Project Background

The "National Program for Urban Development and Sanitation in Bolivia (PRODURSA)", and "the City Solid Waste Environment Plan of Bolivia (GARSU)" are two national plans for waste disposal. Out of the nine subject cities in the latter plan, excluding Sucre, Cochabamba and Cobija, where the plan has already been implemented, cleaning equipment service plans was going to be promoted in six cities (Santa Cruz, El Alto, Oruro, Potosi, Taliya, and Trinidad). However, as a result of the shortage of equipment and the inappropriate waste disposal system in each city, waste used to be left uncollected and the cities thus face serious environmental hygiene problems such as bad smells and occurrences of cholera. As a result of this situation, the Government of Bolivia requested Grant Aid from Japan for the acquisition of equipment needed for waste collection and disposal.

This evaluation was enforced in cities that were the subjects of cooperation in the second phase.

2. Project Overview

(1) Period of Cooperation

FY1992 – FY1993

(2) Type of Cooperation

Grant Aid

(3) Partner Country's Implementing Organizations

Ministry of City Management, National Fund for Regional Development (FNDR), and the Urban Cleanliness Municipal Companies in Oruro, Potosi, Taliya and Trinidad.

(4) Narrative Summary

1) Overall Goal

By the year 2000, 95% of the solid waste in Potosi, Oruro, Taliya and Trinidad is processed .

2) Project Purpose

The solid waste collection and disposal capacity is

improved in the cities of Potosi, Oruro, Taliya and Trinidad.

3) Output

- a) Distribution in each city of solid waste collection conveyance equipment.
- b) Provision of equipment for burying waste in each city.

4) Input

Japanese Side

Grant	1.134 billion yen (1/2)
	1.736 billion yen (2/2)
	(E/N amount)

Bolivian Side

Land for solid waste treatment site

3. Members of Evaluation Team

JICA Bolivia Office

(Commissioned to Local Consultant Ramiro Arzabe V, Mario Saravia, Brian Terceros V., and Gabriela Palao B)

4. Period of Evaluation

17 October 2000 – 15 December 2000

5. Evaluation Results

(1) Relevance

This project installed equipment for waste disposal based on the needs of the targeted cities, as part of the improvement of the cleaning system in each city. As a result, many citizens were able to access the waste disposal service including low-income groups who were not able to receive the service. before The relevance of this project can be evaluated as high since the scale of the equipment was appropriate, and it was suited to the geographical features and the road conditions of each city.

(2) Effectiveness

The operation of the waste collection systems improved in each city, with proper disposal occurring for 85%-95% of the solid waste. In the future, if awareness and cooperation for city cleaning services from citizens is attained, the effectiveness of the project can be even higher.

(3) Efficiency

In Oruro City, equipment was insured and a maintenance management system was established as a result of entrusting operation and management of the supplied equipments to a private company. On the other hand, these measures were not implemented in Potosi City, where the supervision of the private company was insufficient, and in Trinidad City and Tarija City, where they did not entrust operation and management to a private company.

Most of the equipment provided was properly used. In Oruro and Potosi, the activities to transport and dispose waste into reclaimed land were proceeding smoothly. On the other hand, there were problems in Talija, where waste was lying exposed on the surface of the reclaimed land due to negligence of the cleaning company. In Trinidad, access to the reclaimed land became impossible during the rainy season, and thus the waste had been left temporarily at the entrance of the reclaimed land. Although the situation in Tarija and Trinidad raised concerns vis-à-vis environmental pollution, there were no major effects.

(4) Impact

By executing this project, the area covered by the waste disposal service increased three-fold from before the project in Trinidad and four-fold in Talija. In addition, waste disposal began to take place not only in the four cities subject to this project, but also in the surrounding areas.

As the covered area of waste disposal service expanded, the demand for manpower increased, creating new employment opportunities in the area, especially that of unskilled workers. In Potosi city, not only simple waste disposal was being carried out, but also activities went one step further, such as the manufacturing of recycled paper and organic waste resolution by compost bins.

(5) Sustainability

The cleaning companies in both Oruro and Potosi cities have efficient organization. However, for the cleaning companies in Talija and Trinidad city, the personnel systems and the various contracts are not systematized, which means that the organizational structure is somewhat weak. This implies difficulty in continuing the operation. Financially speaking, all the cleaning companies can manage their current expenses with the fees collected from citizens. However, regarding the repayment of money loaned and the expenses for the coming renewal of equipment, there are few prospects and the sustainability is



Provided vehicles

deemed to be low.

6. Lessons Learned and Recommendations

(1) Lessons Learned

In the future, when similar cooperation is carried out, the operation and management of the provided equipment should be entrusted to private companies to raise its efficiency. At the same time, it is important to carry out public relation activities on waste disposal to promote participation of the local residents. In addition to this, it is desirable to develop new technologies and a method of recycling waste that foresees the future activities such as that observed in Potosi.

(2) Recommendations

The level of cleaning fees should be re-examined to make the cleaning company financially sustainable, while taking into consideration the income level of the local residents and financial assistance from the local government, so that equipment can be purchased and loans can be repaid. Moreover, each cleaning company should improve its operation by strengthening the personnel system, as well as equipment maintenance and the management system. In particular, as for the cleaning companies in Trinidad and Talija cities, it is necessary to entrust the operation and management of the installed equipment to private companies.

Each city should carry out research regularly to make possible the comparison and measurement of the influence of different types of waste, and to explore the feasibility of introducing new technology.